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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/542,892	07/20/2005	Gerrit Cornelis Langelaar	NL 030070	1810

24737 7590 11/28/2007

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EXAMINER	
MACKOWEY, ANTHONY M	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/542,892	LANGELAAR, GERRIT CORNELIS	
	Examiner	Art Unit	
	Anthony Mackowey	2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-10 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-10 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 20 July 2005 is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date 7/20/05.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Specification

The disclosure is objected to because of the following informalities:

The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

Arrangement of the Specification

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

(a) TITLE OF THE INVENTION.
(b) CROSS-REFERENCE TO RELATED APPLICATIONS.
(c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
(d) THE NAMES OF THE PARTIES TO A JOINT RESEARCH AGREEMENT.
(e) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC.
(f) BACKGROUND OF THE INVENTION.
    (1) Field of the Invention.
    (2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
(g) BRIEF SUMMARY OF THE INVENTION.
(h) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
(i) DETAILED DESCRIPTION OF THE INVENTION.
(j) CLAIM OR CLAIMS (commencing on a separate sheet).
(k) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).
(l) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

While it appears the specification contains the required sections, no headings clearly identifying the sections have been included. Examiner suggests adding headings to clearly identify the sections of the specification.

On page 2, lines 21-23, the specification refers to an unpublished co-pending International Patent Application IB02/02737 (Attorney's docket PHNL010493EPP). Reference to an unpublished document with an Attorney's docket number is improper. Examiner suggests updating this information with a corresponding US publication/patent or an International publication. Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 5 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 5 recites, "the second coding method provides codes of between approximately 7 to 21 bits longer than the first coding method." The modifier "approximately" expands the range outside the range of 7 to 21 bits, thus the claim indefinite because it is unclear what the bounds of "approximately" 7 to 21 bits are. The specification does not provide a tolerance or suggestion of a flexible range outside of 7 to 21 bits nor is there evidence of what one of ordinary skill in the art would recognize as "approximate" to a range of 7 to 21. It appears that the specification actually supports a rigid fixed range of 7 to 21 bits (page 7, lines 15-18; page 10, line 30; page 11, line 16).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over the US WO 02/060182 to Langelaar (cited in applicant's IDS) in view of US 2001/0053235 to Sato and US 2002/0159632 to Chui et al. (hereafter referred to as "Chui").

Regarding claim 1, Langelaar discloses a method of processing a compressed media signal, in which samples of said media signal are represented by variable-length code words (VLCs) (Fig. 1; page 2, line 17 - page 4, line 30), the method comprising the steps of:

decoding the VLCs of a sample (page 3, lines 20-26; page 4, lines 4-14, *parsing and decoding*);

modifying a plurality of said decoded VLCs in accordance with a given signal processing algorithm (page 3, line 27-page 4, line 21, *embedding the watermark in modification stage*);

encoding the modified decoded VLCs into modified VLCs by a first coding method (page 4, line 26, *variable length encoder*); and

combining the selected modified VLCs and any unmodified VLCs (page 4, lines 4—8 and 22-30, Langelaar clearly states "VLC processing unit decodes selected variable length code words" *(emphasis added)*. Therefore, the MPEG stream is generated from the combination of the modified selected VLCs and any VLCs that were not selected to be modified.).

Langelaar is silent with regard to encoding the modified decoded VLCs into at least one length of code by a second coding method and for each of the plurality of modified VLCS, selecting the modified VLC coded by the first or second method that has a length closest to the length of the corresponding unmodified VLC.

Sato teaches a method including the steps of: decoding the VLCs of a sample (Fig. 1; page 3, paragraph 93, *Variable Length Decoder*); modifying a plurality of said decoded VLCs in accordance with a given signal processing algorithm (page 3, paragraphs 93 and 94, *adding data to be inserted to the output of the VLD*); encoding the modified decoded VLCs into modified VLCs by a first coding method (page 3, paragraph 94, *Variable Length Coder*); for each of the plurality of modified VLCs, selecting the modified VLC coded by the first method if the length of the modified VLC code length coincides with the length of the original MPEG2 and if not, selects the original MPEG2 data (unmodified VLC) (pages 3 and 4, paragraph 95); and combining the selected modified VLCs and any unmodified VLCs (Fig. 1; pages 3 and 4, paragraph 95). Sato further teaches selecting modified VLCs if the length coincides with the original data and analyzing the number of times the original or modified data is used to determine if the data has been inserted into the image data sufficiently enough to be detected (page 4, paragraphs 95-97).

Chui discloses an image re-encoding system and method including a decoder decoding an input variable length coded image (page 4, paragraphs 63; page 1, paragraph 8), re-encoding the using a plurality of methods including variable length coding and escape coding (pages 4 and 5, paragraph 66; pages 7 and 8, paragraphs 94-102) and selecting the block encoded by one of the method based on the coding length (page 4, paragraph 66).

It would have been obvious to one of ordinary skill in the art at the time the invention was made that the teachings of Langelaar, Sato and Chui could be combined such that the method taught by Langelaar would be modified to include encoding the modified decoded VLCs into at least one length of code by a second coding method and for each of the plurality of modified VLCs, selecting the modified VLC coded by the first or second method based on the length. In view of Sato's teaching of selecting modified VLCs if the length coincides with the original data and analyzing the number of times the original or modified data is used to determine if the data has been inserted into the image data sufficiently enough to be detected (page 4, paragraphs 95-97), it further would have been obvious to one of ordinary skill in the art at the time the invention was made to select of the modified VLC coded by the first or second method that has a length closest to the length of the corresponding unmodified VLC.

This combination would predictably result in a method that includes encoding the modified decoded VLCs using a plurality of encoding methods and selecting the encoded modified VLC by one of the methods based on length criteria, thereby improving the likelihood that the encoded modified VLC selected as opposed to the original data thus ensuring the data is inserted into the image data sufficiently enough to be detected. It has been held that "[t]he combination of familiar elements according to known methods is likely to be obvious when it does not more than yield predictable results." *KSR.*, 127 S. Ct. at 1739, 82USPQ2d at 1395 (2007) (citing *Graham*, 383 U.S. at 12)

Regarding claim 2, Langelaar further discloses the first coding method is a standard VLC coding method (page 4, line 26).

Regarding claim 3, Chui further discloses the second coding method is an Escape-coding method (page 8, paragraph 102).

Regarding claim 4, Chui further discloses the modified encoded VLCs are encoded into a plurality of lengths using the second coding method (page 8, paragraph 102).

Regarding claim 5, Applicant's invention utilizes a "run-merging" algorithm and the specification explicitly refers to WO 02/060182 (Langelaar) as teaching the basic principles of "run-merging" (page 4, line 29 – page 5, line 2). The specification further admits the VLC of the "run-merging" algorithm is a size between 3 and 17 bits (col. 7, line 16). Therefore, although the Langelaar does not explicitly disclose the bit length of the VLC, the specification is understood as admitted prior art that the method taught by Langelaar results in a VLC of bit length between 3 and 17 bits. Chui further discloses an escape code of a maximum of 32 bits (page 8, paragraph 102). The difference between 17 and 32 is 15, thus the second coding method provides codes of between approximately 7 to 21 bits longer than the first coding method is obvious in view of the combination of the teachings of Langelaar, Chui and the admitted prior art in the specification.

Regarding claim 6, Langelaar further discloses the signal processing algorithm is a watermark algorithm (page 2, lines 17-22; page 3, line 27 – page 4, line 21).

Regarding claim 7, Langelaar further discloses the decoded VLCs are only modified under certain criteria, said criteria concerning the visibility of an applied watermark (page 6, line 7 – page 8, line 14).

Regarding claim 8, Langelaar further discloses inserting bits into the encoded modified VLCs (page 4, lines 29-30).

Regarding claim 9, Langelaar further discloses the method involves the treatment of packets of VLCs individually, without reference to other packets (page 3, line 20 – page 4, line 21).

Regarding claim 10, Langelaar discloses a signal processing device for a compressed media signal (Fig. 1; page 2, line 17 - page 4, line 30) comprises:

a decoder operable to decode samples of a compressed media signal represented by variable-length code words (VLCs) (page 3, lines 20-26; page 4, lines 4-14, *decoder*);

means for modifying a plurality of the decoded VLCs in accordance with a given signal processing algorithm page 3, line 27-page 4, line 21, *modification stage*);

a first encoder operable to encode the modified decoded VLCs into modified VLCs by a first coding method (page 4, line 26, *variable length encoder*);

Langelaar is silent with regard to a second encoder operable to encode the modified decoded VLCs into modified VLCs by a second coding method; memory means operable to buffer the modified decoded VLCs from the fist and second encoders; and a controller operable to select the modified VLC from either the first or second encoder closest in length to an unmodified VLC, for each of the plurality of modified VLCs.

Sato discloses a decoder operable to decode samples of a compressed media signal represented by variable-length code words (VLCs) (Fig. 1; page 3, paragraphs 82, 83 and 93, Variable Length Decoder (*VLD)*); means for modifying a plurality of the decoded VLCs in accordance with a given signal processing algorithm (Fig. 1; page 3, paragraphs 84-86, 93 and 94, *data adder*); a first encoder operable to encode the modified decoded VLCs into modified VLCs by a first coding method (page 3, paragraphs 87 and 94, *Variable Length Coder*); and a controller operable to select modified VLC coded by the first method if the length of the modified VLC code length coincides with the length of the original MPEG2 and if not, selects the original MPEG2 data (unmodified VLC), for each of the plurality of modified VLCs (pages 3 and 4, paragraphs 88 and 95, *selector*).

Chui discloses an image re-encoding system and method including a decoder decoding an input variable length coded image (page 4, paragraphs 63; page 1, paragraph 8), re-encoding the using a plurality of methods including variable length coding and escape coding (pages 4 and 5, paragraph 66; pages 7 and 8, paragraphs 94-102) and selecting the block encoded by one of the method based on the coding length (page 4, paragraph 66). Chui also discloses a memory means operable to buffer the modified decoded VLCs from the first and second encoders (page 3, paragraphs 48-55).

It would have been obvious to one of ordinary skill in the art at the time the invention was made that the teachings of Langelaar, Sato and Chui could be combined such that the signal processing device taught by Langelaar would be modified to include a second encoder operable to encode the modified decoded VLCs into at least one length of code by a second coding method, a memory means operable to buffer the modified decoded VLCs from the first and second encoders and a controller for selecting the modified VLC coded by the first or second method based on the length, for each of the plurality of modified VLCs. In view of Sato's teaching of selecting modified VLCs if the length coincides with the original data and analyzing the number of times the original or modified data is used to determine if the data has been inserted into the image data sufficiently enough to be detected (page 4, paragraphs 95-97), it further would have been obvious to one of ordinary skill in the art at the time the invention was made to select of the modified VLC coded by the first or second method that has a length closest to the length of the corresponding unmodified VLC.

This combination would predictably result in a signal processing device that encodes the modified decoded VLCs using a plurality of encoding methods and selects the encoded modified VLC by one of the methods based on length criteria, thereby improving the likelihood that the encoded modified VLC selected as opposed to the original data thus ensuring the data is inserted into the image data sufficiently enough to be detected. It has been held that "[t]he combination of familiar elements according to known methods is likely to be obvious when it does not more than yield predictable results." *KSR.*, 127 S. Ct. at 1739, 82USPQ2d at 1395 (2007) (citing *Graham*, 383 U.S. at 12)

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US 5,381,144 to Wilson et al.

US 5,402,123 to Jung

US 5,793,897 to Jo et al.

US 6,104,754 to Chujoh et al.

US 7,177,441 to Condon et al.

US 2003/0016756 to Steenhof et al.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anthony Mackowey whose telephone number is (571) 272-7425. The examiner can normally be reached on M-F 9:00-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Werner can be reached on (571) 272-7401. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

AM
11/26/07

BRIAN WERNER
SUPERVISORY PATENT EXAMINER

DETAILED ACTION

Specification

The disclosure is objected to because of the following informalities:

The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

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(e) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC.
(f) BACKGROUND OF THE INVENTION.
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(h) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
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Regarding claim 1, Langelaar discloses a method of processing a compressed media signal, in which samples of said media signal are represented by variable-length code words (VLCs) (Fig. 1; page 2, line 17 - page 4, line 30), the method comprising the steps of:

decoding the VLCs of a sample (page 3, lines 20-26; page 4, lines 4-14, *parsing and decoding*);

modifying a plurality of said decoded VLCs in accordance with a given signal processing algorithm (page 3, line 27-page 4, line 21, *embedding the watermark in modification stage*);

encoding the modified decoded VLCs into modified VLCs by a first coding method (page 4, line 26, *variable length encoder*); and

combining the selected modified VLCs and any unmodified VLCs (page 4, lines 4—8 and 22-30, Langelaar clearly states "VLC processing unit decodes selected variable length code words" *(emphasis added)*. Therefore, the MPEG stream is generated from the combination of the modified selected VLCs and any VLCs that were not selected to be modified.).

Langelaar is silent with regard to encoding the modified decoded VLCs into at least one length of code by a second coding method and for each of the plurality of modified VLCS, selecting the modified VLC coded by the first or second method that has a length closest to the length of the corresponding unmodified VLC.

Sato teaches a method including the steps of: decoding the VLCs of a sample (Fig. 1; page 3, paragraph 93, *Variable Length Decoder*); modifying a plurality of said decoded VLCs in accordance with a given signal processing algorithm (page 3, paragraphs 93 and 94, *adding data to be inserted to the output of the VLD*); encoding the modified decoded VLCs into modified VLCs by a first coding method (page 3, paragraph 94, *Variable Length Coder*); for each of the plurality of modified VLCs, selecting the modified VLC coded by the first method if the length of the modified VLC code length coincides with the length of the original MPEG2 and if not, selects the original MPEG2 data (unmodified VLC) (pages 3 and 4, paragraph 95); and combining the selected modified VLCs and any unmodified VLCs (Fig. 1; pages 3 and 4, paragraph 95). Sato further teaches selecting modified VLCs if the length coincides with the original data and analyzing the number of times the original or modified data is used to

determine if the data has been inserted into the image data sufficiently enough to be detected (page 4, paragraphs 95-97).

Chui discloses an image re-encoding system and method including a decoder decoding an input variable length coded image (page 4, paragraphs 63; page 1, paragraph 8), re-encoding the using a plurality of methods including variable length coding and escape coding (pages 4 and 5, paragraph 66; pages 7 and 8, paragraphs 94-102) and selecting the block encoded by one of the method based on the coding length (page 4, paragraph 66).

It would have been obvious to one of ordinary skill in the art at the time the invention was made that the teachings of Langelaar, Sato and Chui could be combined such that the method taught by Langelaar would be modified to include encoding the modified decoded VLCs into at least one length of code by a second coding method and for each of the plurality of modified VLCs, selecting the modified VLC coded by the first or second method based on the length. In view of Sato's teaching of selecting modified VLCs if the length coincides with the original data and analyzing the number of times the original or modified data is used to determine if the data has been inserted into the image data sufficiently enough to be detected (page 4, paragraphs 95-97), it further would have been obvious to one of ordinary skill in the art at the time the invention was made to select of the modified VLC coded by the first or second method that has a length closest to the length of the corresponding unmodified VLC.

This combination would predictably result in a method that includes encoding the modified decoded VLCs using a plurality of encoding methods and selecting the encoded modified VLC by one of the methods based on length criteria, thereby improving the likelihood that the encoded modified VLC selected as opposed to the original data thus ensuring the data is

inserted into the image data sufficiently enough to be detected. It has been held that "[t]he combination of familiar elements according to known methods is likely to be obvious when it does not more than yield predictable results." *KSR.*, 127 S. Ct. at 1739, 82USPQ2d at 1395 (2007) (citing *Graham*, 383 U.S. at 12)

Regarding claim 2, Langelaar further discloses the first coding method is a standard VLC coding method (page 4, line 26).

Regarding claim 3, Chui further discloses the second coding method is an Escape-coding method (page 8, paragraph 102).

Regarding claim 4, Chui further discloses the modified encoded VLCs are encoded into a plurality of lengths using the second coding method (page 8, paragraph 102).

Regarding claim 5, Applicant's invention utilizes a "run-merging" algorithm and the specification explicitly refers to WO 02/060182 (Langelaar) as teaching the basic principles of "run-merging" (page 4, line 29 – page 5, line 2). The specification further admits the VLC of the "run-merging" algorithm is a size between 3 and 17 bits (col. 7, line 16). Therefore, although the Langelaar does not explicitly disclose the bit length of the VLC, the specification is understood as admitted prior art that the method taught by Langelaar results in a VLC of bit length between 3 and 17 bits. Chui further discloses an escape code of a maximum of 32 bits (page 8, paragraph 102). The difference between 17 and 32 is 15, thus the second coding method provides codes of

between approximately 7 to 21 bits longer than the first coding method is obvious in view of the combination of the teachings of Langelaar, Chui and the admitted prior art in the specification.

Regarding claim 6, Langelaar further discloses the signal processing algorithm is a watermark algorithm (page 2, lines 17-22; page 3, line 27 – page 4, line 21).

Regarding claim 7, Langelaar further discloses the decoded VLCs are only modified under certain criteria, said criteria concerning the visibility of an applied watermark (page 6, line 7 – page 8, line 14).

Regarding claim 8, Langelaar further discloses inserting bits into the encoded modified VLCs (page 4, lines 29-30).

Regarding claim 9, Langelaar further discloses the method involves the treatment of packets of VLCs individually, without reference to other packets (page 3, line 20 – page 4, line 21).

Regarding claim 10, Langelaar discloses a signal processing device for a compressed media signal (Fig. 1; page 2, line 17 - page 4, line 30) comprises:

a decoder operable to decode samples of a compressed media signal represented by variable-length code words (VLCs) (page 3, lines 20-26; page 4, lines 4-14, *decoder*);

means for modifying a plurality of the decoded VLCs in accordance with a given signal processing algorithm page 3, line 27-page 4, line 21, *modification stage*);

a first encoder operable to encode the modified decoded VLCs into modified VLCs by a first coding method (page 4, line 26, *variable length encoder*);

Langelaar is silent with regard to a second encoder operable to encode the modified decoded VLCs into modified VLCs by a second coding method; memory means operable to buffer the modified decoded VLCs from the fist and second encoders; and a controller operable to select the modified VLC from either the first or second encoder closest in length to an unmodified VLC, for each of the plurality of modified VLCs.

Sato discloses a decoder operable to decode samples of a compressed media signal represented by variable-length code words (VLCs) (Fig. 1; page 3, paragraphs 82, 83 and 93, Variable Length Decoder (*VLD)*); means for modifying a plurality of the decoded VLCs in accordance with a given signal processing algorithm (Fig. 1; page 3, paragraphs 84-86, 93 and 94, *data adder*); a first encoder operable to encode the modified decoded VLCs into modified VLCs by a first coding method (page 3, paragraphs 87 and 94, *Variable Length Coder*); and a controller operable to select modified VLC coded by the first method if the length of the modified VLC code length coincides with the length of the original MPEG2 and if not, selects the original MPEG2 data (unmodified VLC), for each of the plurality of modified VLCs (pages 3 and 4, paragraphs 88 and 95, *selector*).

Chui discloses an image re-encoding system and method including a decoder decoding an input variable length coded image (page 4, paragraphs 63; page 1, paragraph 8), re-encoding the using a plurality of methods including variable length coding and escape coding (pages 4 and 5,

paragraph 66; pages 7 and 8, paragraphs 94-102) and selecting the block encoded by one of the method based on the coding length (page 4, paragraph 66). Chui also discloses a memory means operable to buffer the modified decoded VLCs from the first and second encoders (page 3, paragraphs 48-55).

It would have been obvious to one of ordinary skill in the art at the time the invention was made that the teachings of Langelaar, Sato and Chui could be combined such that the signal processing device taught by Langelaar would be modified to include a second encoder operable to encode the modified decoded VLCs into at least one length of code by a second coding method, a memory means operable to buffer the modified decoded VLCs from the first and second encoders and a controller for selecting the modified VLC coded by the first or second method based on the length, for each of the plurality of modified VLCs. In view of Sato's teaching of selecting modified VLCs if the length coincides with the original data and analyzing the number of times the original or modified data is used to determine if the data has been inserted into the image data sufficiently enough to be detected (page 4, paragraphs 95-97), it further would have been obvious to one of ordinary skill in the art at the time the invention was made to select of the modified VLC coded by the first or second method that has a length closest to the length of the corresponding unmodified VLC.

This combination would predictably result in a signal processing device that encodes the modified decoded VLCs using a plurality of encoding methods and selects the encoded modified VLC by one of the methods based on length criteria, thereby improving the likelihood that the encoded modified VLC selected as opposed to the original data thus ensuring the data is inserted into the image data sufficiently enough to be detected. It has been held that "[t]he combination of

familiar elements according to known methods is likely to be obvious when it does not more than yield predictable results." *KSR.*, 127 S. Ct. at 1739, 82USPQ2d at 1395 (2007) (citing *Graham*, 383 U.S. at 12)

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US 5,381,144 to Wilson et al.

US 5,402,123 to Jung

US 5,793,897 to Jo et al.

US 6,104,754 to Chujoh et al.

US 7,177,441 to Condon et al.

US 2003/0016756 to Steenhof et al.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anthony Mackowey whose telephone number is (571) 272-7425. The examiner can normally be reached on M-F 9:00-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Werner can be reached on (571) 272-7401. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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11/26/07

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